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(71) Applicant: **GENERAL MOTORS CORPORATION**
General Motors Building 3044 West Grand
Boulevard
Detroit Michigan 48202(US)

(72) Inventor: Fuehrer, Reece R.
51 North 200 East
Danville Indiana 46122(US)
Inventor: Won, Harvey Donald
786 Winter Court
Carmel Indiana 46032(US)

74 Representative: Denton, Michael John et al
Patent Section - Luton Office (F6) Vauxhall
Motors Limited P.O. Box 3 Kimpton Road
Luton Bedfordshire LU2 0SY(GB)

54 Control circuit for vehicle retardation.

⑤ A control circuit for vehicle retardation has a hydraulic retarder (26) and a slipping friction brake (14) operating in concert to retard the forward motion of the vehicle. The hydraulic retarder is an output driven device which is operable to absorb increasing energy as the vehicle speed increases. The friction brake is normally a ratio control reaction brake for the lowest forward drive ratio of the vehicle transmission. The friction brake has an additional apply piston (84,86) which is operable to slippingly engage the friction brake whenever the hydraulic retarder is operable and the vehicle transmission is not in the lowest forward ratio. The control circuit has a control valve (52) which is operable to control the engagement pressure of the additional piston in a manner such that the friction braking effort is higher at low vehicle speeds. This compensates for the lower effectiveness of the output driven hydraulic retarder. The control circuit is also effective to control the operation of the hydraulic retarder, the main piston of the reaction brake, cooling flow to the friction brake and cooling flow from the hydraulic retarder.

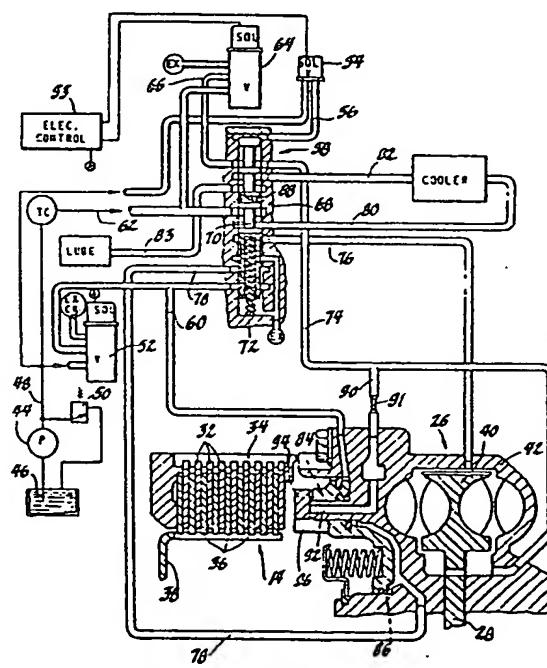


Fig. 2



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EUROPEAN SEARCH REPORT

Application Number

EP 88 30 5067

| DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-------------------|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim |
| A | GB-A-2 022 743 (GENERAL MOTORS) * figures 1-10 * | 1 |
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| A | GB-A-2 052 658 (GENERAL MOTORS) * figures 1-10 * | 1 |
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| A | US-A-4 480 728 (K. A. BAILEY et al.) * figures 1-5 * | 1 |
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| D,A | US-A-4 070 927 (J. C. POLAK) | |
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| CLASSIFICATION OF THE APPLICATION (Int. Cl.4) | | |
| B 60 T 10/02 | | |
| TECHNICAL FIELDS SEARCHED (Int. Cl.4) | | |
| B 60 T F 16 D | | |
| The present search report has been drawn up for all claims | | |
| Place of search | Date of completion of the search | Examiner |
| BERLIN | 06-10-1989 | LUDWIG H J |
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